

EPA/OPP MICROBIOLOGY LABORATORY  
ESC, Ft. Meade, MD

Standard Operating Procedure  
for  
Monitoring Temperature of Incubators, Refrigerators, and Freezers

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1.0 SCOPE AND APPLICATION:

- 1.1 This protocol describes the procedures for recording the temperature of laboratory incubators, refrigerators and freezers.

2.0 DEFINITIONS:

- 2.1 ASTM = American Society for Testing and Materials  
2.2 NIST = National Institute of Standards and Technology

3.0 HEALTH AND SAFETY: Not applicable

4.0 CAUTIONS: None

5.0 INTERFERENCES: None

6.0 PERSONNEL QUALIFICATIONS:

- 6.1 Personnel are required to be knowledgeable about the procedures in this SOP.

7.0 SPECIAL APPARATUS AND MATERIALS:

- 7.1 Incubator No. 1-4, 6 and 10-16 are large capacity Precision Incubators, Model No. 30M.
- 7.1.1 Incubator No. 1. Serial No. 699010761. Location: Room B204.
- 7.1.2 Incubator No. 2. Serial No. 699010763. Location: Room B204.
- 7.1.3 Incubator No. 3. Serial No. 698110167. Location: Room B204.
- 7.1.4 Incubator No. 4. Serial No. 698110166. Location: Room B204.
- 7.1.5 Incubator No. 6. Serial No. 699021013. Location: Room B207.
- 7.1.6 Incubator No. 7, Serial No.9211-005 Precision Incubators bench top incubator Model No. 2EG. Location: Room B202.
- 7.1.7 Incubator No. 8. Serial No. 06046. Boekel Industries bench top incubator Model 132000. Location: Room B201.

- 7.1.8 Incubator No. 9. Serial No. 0799-0160. LAB-LINE Bench top Incubator, Imperial III. Location: Room B202.
- 7.1.9 Incubator No. 10. Serial No. 6000529. Location: Room B203.
- 7.1.10 Incubator No. 11. Serial No. 6000528. Location: Room B203.
- 7.1.11 Incubator No. 12. Serial No. 6000527. Location: Room B203.
- 7.1.12 Incubator No. 13. Serial No. 699021012. Location: Room B203.
- 7.1.13 Incubator No. 14. Serial No. 600041067. Location: Room B202.
- 7.1.14 Incubator No. 15. Serial No. 600041066. Location: Room B202.
- 7.1.15 Incubator No. 16. Serial No. 600041068. Location: Room B202.
- 7.1.16 Incubator No. 17. Serial No. U15N-400053-UN. Location: Room B207.

7.2 Refrigerators/Freezers:

- 7.2.1 Refrigerator No. 1R Summit - Model No. BI-605J. Serial No.970900695. Location: Room B207.
- 7.2.2 Refrigerator/Freezer No. 2R/2F White Westinghouse Refrigerator/Freezer - Model No. WRT17CGAWO. Serial No. BA32603844. Location: Room B206.
- 7.2.3 Refrigerator/Freezer No. 3R/3F White-Westinghouse Refrigerator/Freezer. Model No. WRT17CGAWO. Serial No. BA32403117. Location: Room B205.
- 7.2.4 Refrigerator No. 5R Summit - Model No. BI-605J. Serial No. 970900676. Location: Room B205.
- 7.2.5 Refrigerator No. 6R Summit - Model No. BI-605J. Serial No. 970900665. Location: Room B207.
- 7.2.6 Refrigerator No. 7R Revco Technologies - Model No. RFS214A14. Serial No. P09K-476736-PK. Location: Room B204.

7.2.7 Refrigerator No. 8R Revco Technologies - Model No. RFS214A14. Serial No. R02L-52413-RL. Location: Room B202.

7.2.8 Freezer No. 9F Revco Technologies - Model No. ULT390-5-A30. Serial No. U08J-443679-UJ. Location: Room B209.

7.2.9 Freezer No. 10F Revco Technologies - Model No. ULT1740-3-A36. Serial No. U07N-200015-UN. Location: Room 203.

7.2.10 Refrigerator No. 11R Fisher Scientific - Model Isotemp Plus. Serial No. 410N0005. Location: Room B201.

7.3 Thermometers directly traceable to or certified by the NIST or ASTM are used to monitor temperatures of individual incubators, refrigerators and freezers.

8.0 INSTRUMENT OR METHOD CALIBRATION:

8.1 Thermometers are calibrated according to SOP EQ-02, Calibration of Thermometers.

9.0 SAMPLE HANDLING AND STORAGE: Not applicable

10.0 PROCEDURE AND ANALYSIS:

10.1 The temperature of each instrument will be recorded once daily each working day (Monday through Friday excluding holidays and days when the ESC is closed for any reason) on the appropriate Temperature Record form (see 16.0). On weekends, holidays and days when the ESC is closed, note the reason why the temperature is not recorded under "Maintenance and Notes" on the appropriate Temperature Record form (see 16.0).

11.0 DATA ANALYSIS/CALCULATIONS: None

12.0 DATA MANAGEMENT/RECORDS MANAGEMENT:

12.1 The temperature of each incubator, refrigerator and freezer is to be recorded promptly, legibly and in indelible ink on the appropriate incubator, refrigerator or freezer temperature record form. Completed forms are archived on a yearly basis in notebooks kept in secured file cabinets in the file room D217. Archived data are subject to OPP's official retention schedule contained in SOP ADM-03,

Records and Archives.

13.0 QUALITY CONTROL:

- 13.1 For quality control purposes, the required information is documented on the appropriate forms.
- 13.2 The thermometers are point checked annually against a NIST traceable thermometer. A piece of label tape, displaying the correction factor, is placed around the top of the corresponding thermometer. This procedure is described in SOP EQ-02, Calibration of Thermometers. The point check calibration records of thermometers are maintained in a notebook, which is archived in the laboratory's file room D217.

14.0 NONCONFORMANCE AND CORRECTIVE ACTION:

- 14.1 Any deviation from the standard procedures will be documented in the record book and investigated. The reasons for any difficulties achieving and maintaining the target temperature will be determined and the appropriate corrective action will be taken by the laboratory staff. If the problem cannot be determined or corrected, a service technician will be called in to evaluate the situation and to initiate the service on the equipment.

15.0 REFERENCES: None

16.0 FORMS AND DATA SHEETS:

- 16.1 Incubator Temperature Record
- 16.2 Refrigerator Temperature Record
- 16.3 Freezer Temperature Record

# Incubator Temperature Record

## OPP Microbiology Laboratory

Month/Year: ____/____		Laboratory #/Incubator ID: ____/____		
Incubator Target Temp: ____±1 °C		Thermometer ID/Correction Factor: ____/____ °C		
Day	Time/ Init.	Temp.*	Adjustments Necessary	Maintenance and Notes
1				
2				
3				
4				
5				
6				
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8				
9				
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11				
12				
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31				

\* Corrected temperature recorded

## Refrigerator Temperature Record

### OPP Microbiology Laboratory

Month/Year: ____/____		Laboratory #/Refrigerator ID: ____/____		
Refrigerator Target Temp: ____ °C		Thermometer ID/Correction Factor: ____/____ °C		
Day	Time/ Init.	Temp.*	Adjustments Necessary	Maintenance and Notes
1				
2				
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31				

\* Corrected temperature recorded

## Freezer Temperature Record

### OPP Microbiology Laboratory

Month/Year: ____/____		Laboratory #/Freezer ID: ____/____		
Freezer Target Temp: ____ °C		Thermometer ID/Correction Factor: ____/____ °C		
Day	Time/ Init.	Temp.*	Adjustments Necessary	Maintenance and Notes
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\* Corrected temperature recorded